

## ABSTRACT OF THE DISCLOSURE

Plasma enhanced chemical vapor deposition (PECVD) reactors and methods of effecting the same are described. In accordance with a preferred implementation, a reaction chamber includes first and second electrodes operably associated therewith. A single RF power generator is connected to an RF power splitter which splits the RF power and applies the split power to both the first and second electrodes. Preferably, power which is applied to both electrodes is in accordance with a power ratio as between electrodes which is other than a 1:1 ratio. In accordance with one preferred aspect, the reaction chamber comprises part of a parallel plate PECVD system. In accordance with another preferred aspect, the reaction chamber comprises part of an inductive coil PECVD system. The power ratio is preferably adjustable and can be varied. One manner of effecting a power ratio adjustment is to vary respective electrode surface areas. Another manner of effecting the adjustment is to provide a power splitter which enables the output power thereof to be varied. PECVD processing methods are described as well.